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A HUMAN NEEDS DIET IN WAR TIME

A. PURPOSE AND METHOD

Since the estimates in this series have aroused a certain amount of criticism, it is well to state again their purpose, and the method by which they are compiled.

It became evident as soon as the supplies of food were restricted and rationed, that the basis of the Ministry of Labour's retail food index, already known to be out of date, could no longer be justified as appropriate ; the general impression was that it under-rated the increase in cost since the outbreak of war. This Institute therefore initiated an investigation to ascertain what modifications were necessary to maintain an adequate diet, and what was the additional cost.

This problem is quite distinct from the parallel questions, what in fact has been the change in average expenditure on food, and whether the change in average diet resulted in more or less adequate nutriment. Average working-class expenditure on food before the war was, as shown in the Ministry of Labour's budget collection in 1937—8, considerably higher than that essential for the purchase of an adequate diet. The Institute has dealt with these questions from time to time by its collection of family budgets. The two problems are, however, often confused.

To test the change in the minimum cost it was necessary to define a pre-war basis. That selected by us was the diet set out by Mr. Rowntree in his *Human Needs of Labour*, modified where necessary to match that estimated by the British Medical Association in 1933. Since some items or quantities named in these diets were no longer obtainable, it was necessary to adjust them so as to correspond to goods actually in the shops and within the official ration. For this purpose the foods available in the shops in Oxford with which the poorer sections of the working-class dealt, were ascertained by personal visits, and the lowest prices in each district of satisfactory foods were recorded. On this basis a dietary was constructed (and modified date by date) which satisfied the standard adopted, was not radically different from existing careful housekeeping habits in the lower income grades, and could in fact be bought. Though no definition can be rigid, unless it is quite unrelated to custom, it was thought that this procedure gave as definite an answer as possible to the question of the change in cost of an unchanged standard.

The results of the investigation detailed below may be compared with the Ministry of Labour's food index. The basic standard for an adult male cost 5s. 11d. in 1933. By applying the Ministry's food index to the pre-war period it is estimated that it would have cost 6s. 11d. in August 1939, and it is improbable that this figure would be substantially changed if a more relevant index were available. From 1st Sept. 1939 to 1st Oct. 1942 the index rose 17% (24 points). Our current enquiry results in nearly 9s. weekly for an adult male, an increase in 30% over the estimated cost in August 1939. This difference, 30% instead of 17%, is our answer to the question we proposed.

This 9s. is exactly the sum estimated by a competent expert as the cost of ' a diet at low cost providing nutrients in accordance with the standards of the Technical Commission (League of Nations) ' for an adult male in January 1942, since which date food prices have not risen. The diet has also been pronounced as unobjectionable by another independent expert. The ' Technical Commission ' gave higher factors for relating the needs of children to an adult male than did the B.M.A. The diet of Table I below has been examined in detail for the calorie and protein content, and it appears to satisfy those slightly different requirements for the assumed family, consisting of man in ordinary work, wife, and three children of school age.

It has been suggested that the Oxford prices are unusually low. In fact they are the same as in the Ministry of Labour Gazette for the foods included in both, if we take the averages for the wide range of meat prices and of the two kinds of margarine. These foods account for 70% of the whole expenditure.

The higher figure sometimes given assumes the purchase of the full ration of bacon (an expensive form of food) and of butter, of only the better margarine, and the more expensive kinds of meat. In that case less meat is obtained, and additions must be made in other directions. Our budgets indicate that such purchases are customary, even by those whose resulting diet is inadequate. But the budgets of less well-to-do families do in fact approximate to the diet set out below in Table I, and comparison between Table II and Table I shows that a slight change of habit (together with the extra shilling to bring the cost up to the minimum) would supply the standard amount of calories and protein.

A. L. Bowley.

B. Changes from April to November 1942.

An article giving the schedule of a ' human needs ' diet that could be bought in Oxford in April 1942 was published in Bulletin Vol. 4 No. 7 ; it represented the continuation of a series of similar inquiries started by us in March 1941, and repeated at about six-monthly intervals. The outline of this ' human needs ' diet was adopted from Mr. S. Rowntree, and modified so as to allow for inevitable war-time adjustments in the supply of individual foods and changes in cost.[1] The schedule which will be discussed in this article was computed during the first three weeks of November 1942. It shows the necessary modifications of the diet compiled in April, owing to changes in rationing and supply, together with the necessary adjustments in outlay, owing to changes in cost—which latter are not always caused by actual changes in price or changes in the quantity bought, but, in a few instances, by purchases of slightly more expensive brands. In November, some of the cheapest kinds of food were difficult to obtain in some parts of the town, and we have therefore found it necessary to allow a higher unit price for split peas and lentils, jam, and cocoa. We have also left the price of fish at 10d. a lb., as given by us in April, although herrings, mackerel, and kippers could be bought at 7d. The herrings which in all parts of the town represented the bulk of the cheap fish, were, however, often very small and hence included an exceptional amount of waste, and the unit price of 10d. was adopted to allow for this fact.

The main changes in the diet since April are caused by the increase in the cheese ration, from 4 ounces to 8 ounces per person per week, and by the supply of household milk. These two foods provide first-class protein at a very low cost, and permitted a reduction of other and more expensive protein foods in our diet. This diet has again been calculated for a family consisting of husband, wife, and three children of school age, with a total 'man ' value of 3.75. It is shown in Table I.

The last two columns of Table I give the changes in quantity and outlay since April 1942. Foods that were not available in April are dried eggs, household milk, and cooking apples. Cabbage was not sold by weight in November, but specimens bought in various parts of the town gave an average cost per lb. of slightly less than 2d., that is, a price only about half as much as that ruling for greens in April. The diet—as will be seen from Table IV—is in its main nutritional features identical with that scheduled in April. As it stands in Table I it does not permit the housewife to utilize fully her ' points,' which would be the case if she adds the supplementary foods suggested in Table III, as ' points ' have to be surrendered for syrup, treacle, and tinned herrings.[2] She would, in fact, then take up her full rations,[3] except of bacon, which—regarding its nutritional value—is an expensive food. On the other hand, a small quantity of bacon is useful for flavouring, especially dishes made of dried legumes. A comparison of the last two rows of Table IV indicates the effects which the addition of the supplementary foods would have on the nutritional value of the diet. It is then, of course, no longer a minimum diet. The cost of the diet including the supplementary foods would amount to 35 shillings.

It is interesting to compare the diet in Table I with that shown in Table II. This diet is based on budgets collected by us in June 1942.[4]

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[1] We also replaced the tinned skimmed milk in Mr. Rowntree's diet by fresh full cream milk.

[2] As an alternative to syrup or treacle she could buy some more dried fruit, which is also rationed on ' points.'

[3] Only 8 oz. of tea instead of 10 oz.

[4] *Cf. Supplement* No. 3, BULLETIN Vol. 4.

TABLE I

Weekly Diet for a Family of 5 Persons

(3.75 ' Men ')

	Quantity	Price per Unit[1]		Changes since April 1942		
				Quantity	Outlay	
(A) RATIONED FOODS		s.	d.		s.	d.
(1) Meat	7 lb.		10[6]	...		...
(2) Bacon	—		—	— 4 oz.	—	4½
(3) Margarine[2]	1 lb. 14 oz.		7[6]	...		...
(4) Lard	10 oz.		9	...		...
(5) Sugar	2 lb. 8 oz.		3	...		...
(6) Jam	1 lb. 4 oz.		10½	...	+	½
(7) Tea	8 oz.	2	4	...		...
(8) Cheese	2 lb. 8 oz.	1	1	+1 lb. 9 oz.	+ 1	8¼
(9*a*) Eggs, in shell	½ egg		2	—½ egg	—	1
(9*b*) *ditto*, dried	1 egg		1¾	+ 1 egg	+	1¾
(10*a*) Peas and Lentils	1 lb.		5½[6]	...	+	1
(10*b*) Beans	8 oz.		6	...		...
(11) Rice, etc.	1 lb.		6[6]	— 8 oz.	—	3
(12) Dried Fruit[3]	8 oz.		8[6]	— 8 oz.	—	4
(13) Household Milk	1¼ tin[5]		9	+ 1¼ tin	+	11¼
Outlay on Group (A)		15	8¼		+ 1	10¼
(B) UNRATIONED CARBOHYDRATE FOODS						
(16)[4] Bread	18 lb. 8 oz.		2¼	— 8 oz.	+	3¾
(17) Flour	2 lb. 8 oz.		2½	...	+	½
(18) Potatoes	34 lb. 8 oz.		1	...	—	7
(19) Rolled Oats	2 lb. 8 oz.		3½	...	+	2½
Outlay on Group (B)		7	7¼		—	¼
(C) MILK AND VEGETABLES						
(20*a*) Milk, ordinary	14 pt.		4½	...		...
(20*b*) *ditto*, school	5 pt.		1½	...		...
(21*a*) Carrots and Turnips	7 lb.		1¾[6]	...	+	1¾
(21*b*) Cabbage	7 lb.		2[7]	...	— 1	2
Outlay on Group (C)		8	0¾		— 1	0¼
D) OTHER FOODS						
(22) Sausage meat, beef	8 oz.		7	—1 lb. 8 oz.	—	10½
(23) Fish	8 oz.		10[6]	—1 lb. 8 oz.	— 1	3
(24) Cocoa	4 oz.	1	4	...	+	½
(25) Condiments	—		4	...		...
(26*a*) Cooking Apples	1 lb.		6	+ 1lb.	+	6
Outlay on Group (D)		1	10½		— 1	7
TOTAL OUTLAY		33	2¾		—	9¼

[1] Milk, price per pt. ; eggs, price of one egg ; household milk, price per tin ; condiments, total outlay ; all other foods, price per lb.

[2] Half ' special ' margarine at 9d. per lb.

[3] Prunes and dates.

[4] The serial figures correspond to those in Table II.

[5] Equivalent to 5 pts. of skimmed milk.

[6] Average price.

[7] Approximately

Table II

Average Weekly Diet Consumed by a Family of 3.75 " Men " (5.4 Persons) in June 1942 at a Cost of 32s. 3½d.

	Quantity	Price per Unit[1]	
		s.	d.
(A)			
(1) Meat	3 lb. 15 oz.	1	2
(2) Bacon	1 lb. 1 oz.	1	10¼
(3) Margarine	1 lb. 5 oz.		9
(3a) Butter	10 oz.	1	7¼
(4) Lard	8 oz.		9
(5) Sugar	2 lb. 12 oz.		3
(6) Jam	7 oz.		11½
(7) Tea	10 oz.	2	7¼
(8) Cheese	1 lb.	1	1
(9) Eggs	7½[7]		2
(10) Legumes, dried	1 oz.		8½
(11) Rice, etc.[2]	6 oz.		8¾
(12) Dried Fruit	6 oz.		8¾
(14)[3]Tinned Fruit & Vegs.[4]	—		3¼[10]
(15) Tinned Fish & Meat	—		3[10]
Outlay on (A)		14	10¾
(B)			
(16) Bread	17 lb.		2
(16a) Cake & Buns	11 oz.		11¾
(17) Flour	2 lb. 12 oz.		2¼
(18) Potatoes	15 lb. 4 oz.		1¼
(19) Rolled Oats	3 oz.		3½
Outlay on (B)		5	8½
(C)			
(20*a*) Milk, ord.	7 pt..		4¼
(20*b*) *ditto*, school	5 pt[8]		1½
(20*c*) *ditto*, govt.	8 pt.[9]		2
(21) Greens & Roots	—		6¾[10]
Outlay on (C)		3	8½
(D)			
(22) Sausages	9 oz.	1	1
(23) Fish	5 oz.	1	3¾
(24) Cocoa	2 oz.	1	7½
(25) Condiments[5]	—	1	7½[10]
(26*b*) Tomatoes, etc.[6]	—		7½[10]
Outlay on (D)		3	4¾
TOTAL OUTLAY		27	8½
(E) *Value of Free Foods & Allotment Produce*			
Free meals	3.6[11]	2	4¾[12]
Free milk, school	—		3½
ditto, government	—	1	0
Allotment Prod.	—		10¾[13]
Value of (E)		4	7

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[1] Milk, price per pt ; eggs, price of one egg ; items Nos. (14), (15), (21), (25), and (26), total outlay ; all other foods, price per lb.

[2] Including ready-to-eat breakfast cereals.

[3] The serial figures correspond to those in Table I.

[4] Point foods only.

[5] Including fancy foods.

[6] Including lettuce, gooseberries, and rhubarb.

[7] ¾ egg from allotment.

[8] 2⅓ pt. free.

[9] 6 pt. free.

[10] Total outlay.

[11] A child's lunch or dinner is counted as ½ meal ; supplementary meals are disregarded.

[12] Assumed.

[13] Vegetables 8¾d. potatoes ½d., eggs 1½d.

Table III

Supplementary Foods to Weekly Diet for for a Family of 5 Persons

	Quantity	Outlay	
		s.	d.
Bacon	¼ lb.		4½
Dried Eggs	2 eggs		3½
Syrup or Treacle	½ lb.		4¼
Tin Herrings			9
		1	9¼

Table IV

Nutritional Intake from Human Needs Diet

	per " Man " per Day		
	Calories	Total Protein	Animal Protein
		grammes	grammes
April 1942	3300	105	51
Nov. 1942	3300	105	51
ditto, including Supplement. Foods	3350	107	53

To obtain it we have averaged the food consumption per ' man ' of the 16 families—out of 161—with the lowest food expenditure per ' man,' ranging from 5s. 8½d. to 8s. 11½d. per week. The average outlay on food of these families was 7s. 4½d. per ' man ' per week, and the average size of the family was 6.8 persons or 4.77 ' men.' The diet shown in Table II has been calculated by means of these data for a hypothetical family of 3.75 ' men,' which would be constituted as follows: 0.7 husband, 0.8 wife, 0.2 earners 16 years and over, 0.4 earners under 16, 2.0 dependent children over 5, 1.3 dependent children 5 years and under, making a total of 5.4 persons, as compared with the family of 5 persons assumed for our ' human needs ' diet. The total weekly outlay on food of such a family came to 27s. 8½d. while the value of the foods obtained free or from allotments amounted to approximately 4s. 7d. If, moreover, the milk supplied under the Government scheme had to be bought at the price of ordinary milk, another 1s. 6d. would have to be added to the cost of the diet, which would then reach a total of 33s. 9d. The nutritional intake per ' man ' per day from this diet is approximately 2900 calories and 91 grammes protein, of which about 45 grammes are animal protein.

In comparing the data in Table I and Table II several striking facts will at once be noted. In Table II the average prices of many of the foods are considerably higher than in Table I. The low total outlay on meat (4s. 7d.) in Table II and the large amount of eggs are concomitants, as children up to the age of five obtain only half the meat ration allowed to all other persons, but four times as many eggs. Actually, the family pictured in Table II obtains about 92 per cent. of their meat ration, 78 per cent. of the bacon ration, 72 per cent. of the cheese ration, and 93 per cent. of the butter ration. The consumption of dried legumes, potatoes, and rolled oats given in Table II appears remarkably low if compared with that suggested in Table I, and also the consumption of vegetables.

Although it is well to bear clearly in mind that the family pictured in Table II is an artificial composition, the differences in the price per unit of the foods enumerated in Table I and Table II, and also the differences in the quantities that might be bought and that are being bought, are very real. They both give an indication of the difference between the theoretical and the real cost of living of that type of family —or, conversely, the difference between their potential and their actual standard of nutrition.

A certain amount of controversy has arisen as to the practical implications of our ' human needs ' diet, and the first part of this article deals in full with this criticism. Two specific points may, however, here be stressed to guard against misunderstandings. *First*, it can be argued with some justification that the diet shown in Table I would be unsuitable for a family the age structure of whose members would be similar to that connected with the diet pictured in Table II, as very young children need a diet containing more easily assimilable protein and less ' bulk ' than our ' human needs ' diet. It is, indeed, for that reason that we have assumed our ideal family to have only children of school age, and the data relating to Table II have been adopted for the sake of comparison only in default of others better suited for that purpose. *Secondly*, the comparison of the two diets implies, of course, no criticism of the mother of many children and with only a small housekeeping allowance. The fact which emerges from a comparison of the two Tables confirms what anyone familiar with the study of social conditions would have guessed, namely, that the mother of a large family[1] has her hands so full with housework, mending and, generally, the care of her family, that she has little time for planning the most economical diet and buying and preparing it, even if she possesses the necessary skill and training, the more so as the smooth routine of her household is frequently interrupted by pregnancies and childbirth. Besides, in families where the husband is rather exacting and conservative with respect to his food, the rest of the household has often to make shift with what is left after the husband's meals have been provided. As regards the families of our sample with the lowest expenditure on food, no simple causal connexion can be traced between nutritional intake and food expenditure,[2] and the surest way of improving their standard of nutrition seems to be to supply free meals to the members of these families, in particular to the children.

T. Schulz.

WAGES AND PRICES

In view of recent discussions on the wage problem, and suggestions that a wage stop would put an end to inflation, it may be useful to give a short account of the methods which have led to increases in wage rates in different industries ; and to compare the rise in wages, since 1938, with the corresponding increase in prices, allowing for the incidence of subsidies and of direct and indirect taxation.

Wage Rates.

The two index numbers of wage rates, which refer to the average rates of pay during ordinary working hours, the one published by the London and Cambridge Economic Service (Professor Bowley's index) and the other by the Ministry of Labour, show very similar changes during the past few years, as may be seen from the following figures.

Index Numbers of Wage Rates.

	Average	*End of year* :		
	1938	*1939*	*1940*	*1941*
Ministry of Labour Index	100	104-4½	116	126-7
Professor Bowley's Index	100	105	117	127

The accuracy of Bowley's index, which is published for every month, is thus confirmed during this period by the Ministry of Labour's index, which covers a wider selection of industries. By October 1942, the latest date for which figures are available, the former index shows an increase of 32% above the average level of 1938. From data published by the Ministry of Labour, it appears that, of the total increase in the normal rates of wages since the beginning of the war, wages which are based on a cost of living sliding scale accounted for about a quarter, slightly less than a quarter was arranged by joint standing bodies, slightly more than a quarter by direct negotiations and the rest was by arbitration or other methods.

The following is a classification of the principal industries according to the methods by which changes in wage rates have been effected during the past three years. As in the case of coal mining, one industry may, of course, appear under several different headings.

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[1] It should be remembered that the actual average size of the families of that group was 6.8 persons. On the other hand, four out of these 16 families consisted of only four, and one of only three persons. *Cf. Supplement*, Table X.

[2] *Cf. Supplement*, Table X.

SLIDING SCALES, DEPENDING ON PROCEEDS :
Coal ; Iron and Steel (until early 1940).

COST OF LIVING SLIDING SCALES :
Coal (since 1940) ; Pottery ; Iron and Steel (since early 1940) ; Cotton ; Wool and Worsted (1940 onwards) ; Hosiery ; Textile bleaching, dyeing and finishing ; Boot and Shoe ; Building ; Civil Engineering ; Electrical Contracting ; Tobacco.

FLAT RATE INCREASES :
Coal ; Chemicals ; Pottery ; Brickmaking ; Engineering ; Shipbuilding and repairs ; Tailoring ; Building ; Civil Engineering ; Dock Labourers ; Railways ; Tramway and Omnibus ; Flour Milling ; Printing ; Gas ; Government industry ; Retail and Wholesale Co-operatives.

PERCENTAGE INCREASES :
Shipbuilding and repairs ; Cotton ; Wool and Worsted (1939).

CHANGES IN MINIMUM RATES :
Agriculture ; Coal ; Tailoring ; Railways ; Road Haulage ; Seamen ; Baking ; Woodworking ; Laundries.

In addition special war bonuses or cost of living bonuses were granted in a number of industries ; and in coal mining a new feature was the introduction, in June 1941, of an attendance bonus, which was supplemented, in September 1942, by a special bonus for increased output.

Suggestions were made, in the early months of the war, that wages should be linked to a cost of living index constructed from a basic minimum diet.[3] So far, however, the only important industries to adopt the cost of living sliding scale, since the beginning of the war, have been iron and steel, cotton and wool, and some sections of the coal industry. Even in the industries which are on the cost of living sliding scale, there is no uniform rule governing the corresponding changes in wages. In some cases (e.g. iron and steel and tobacco) wages are very sensitive and move with every one-point change in the index. In other cases (e.g. in building) there is a time-lag of six months before any adjustment is made ; so that sometimes wages linked to the index are rising in one industry while they are falling in another. In a few cases (e.g. in the Leicester wool industry) wages are dependent, not on the general index, but on the index of food prices. Consequently, even allowing for industries which have recently come on to the sliding scale, there is no close correlation between fluctuations in the cost of living index and the aggregate changes in wage rates which are linked to the index. In general, there appears to be an average time-lag of 2½ months between the movements of the two series.

Interest also attaches to the relative changes in the wages of skilled and unskilled labour and of men and women. There has been some tendency, during the past three years, towards reducing the inequality of wages rates between skilled and unskilled work. Under cost of living scales, building craftsmen and labourers, in England and Wales, have each received an increase of 3½d. an hour, so that the ratio of their wages has changed from 100 : 75 to 100 : 79. Similarly in engineering, fitters and labourers have received equal increases, amounting to 13/6 a week since the beginning of the war, and the ratio has changed from 100 : 76 to 100 : 80. All flat rate increases have, of course, the same effect. The increase in minimum rates on railways, though affecting only a minority of workers, also implied a reduction in inequality. In agriculture the establishment of a minimum wage of £3 a week has caused a levelling up of the lower paid counties ; in August 1939 the minimum county wages ranged from 32s. to 38s. 6d. a week and (allowing for changes in hours) the increase has varied from 56 to 88 per cent. At the same time, the discrepancy between agricultural and unskilled urban wages has diminished. In August, 1939, the average wage rate in agriculture was 34s. 8d., and for engineering labourers it was 51s. 4d. ; in October, 1942, the respective averages were 60s. and 64s. 10d., a change in ratio from 68 : 100 to 93 : 100. But since percentage changes and varied increments for different classes have been common, the reduction in inequality cannot have been substantial.

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[3] Cf. J. M. Keynes, *How to pay for the War*. p. 57.

With regard to the relation between men's and women's wages, it is estimated that before the war the average wage rate of women was about 60% of that of men who were in the same industry, though frequently in different occupations. General percentage increases will not have affected this relation. Increases in Trade Board Minima, changes based on the cost of living index and flat rate additions have usually varied between the proportions of 50 : 100 and 75 : 100, according to the standard arrangements for different industries. There appears, therefore, to have been no substantial change in the ratio of wage rates as between men and women.

The weekly earnings of women, however, have risen less than those of men, presumably because of less overtime and night work. Between October 1938 and January 1942 the average earnings of men in the principal industries increased by 41% while women's earnings increased by 35% (using 1938 weights). Owing to changes in the proportions in different industries, new women generally entering the better paid occupations, the earnings of the numbers actually employed at each date show a smaller disparity, the average earnings of women increasing by 46% and those of men by 48% over the same period.[1]

PRICES.

The Ministry of Labour's cost of living index, during this period, suffers from two main deficiencies. On the one hand subsidies have been mainly applied to foods which are included in the index ; and particularly, it appears, to foods which are overweighted in comparison with their relative importance in general expenditure. On the other hand, indirect taxes have been imposed on tobacco and drink which are not adequately represented in the index. As a consequence, the index fails to give an accurate reflection of the general price level. From information which has recently become available, we can estimate the approximate effect of each of these factors.

It was recently stated by Mr. Bevin that ' if the cost of items included in the cost of living index, in respect of which subsidies are being paid by the Ministry of Food, were to increase by amounts equivalent to those subsidies, the cost of living index would be raised by about 20 points, or 10% over its present level.'[1] Since food was originally given a weight of 60% in the index, this implies that, if there were no subsidies, the index of food prices, which stands at present (1st October 1942) at 162, would rise to 195 (July 1914=100).

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[1] The different averages discussed here correspond to the series (*a*) and (*b*), mentioned below, p 324.

It has also been stated that the cost of subsidies amounts to £127 million per annum.[2] Total food expenditure in 1940 was estimated at between £1,370 and £1,470 million[3] and since the Board of Trade index of retail sales of food shows an increase of 2½% since then (comparing the first nine months of 1942 with the same period in 1940), the present expenditure on food may be estimated at between £1,400 and £1,500 million. The cost of subsidies thus amounts to about 9% of the total expenditure on food, so that, if the subsidies were removed, we should expect the average price of food to rise by approximately 9%. The assumption which is introduced here, and which is also implicit in the statement made by Mr. Bevin, is strictly true only if either the demand curve is perfectly inelastic or the supply curve is perfectly elastic; if this is not the case, the effect of subsidies on prices would be reduced and the adjustment to the cost of living index would probably be less than that shown below. The assumption may be justified, however, since the subsidies have been applied to necessary foods, of which the demand may be expected to be inelastic. It is also assumed that the proportion of subsidies to total food expenditure would not be substantially increased if only working-class consumption were considered.

Without subsidies, the present index of food prices would be 195. If subsidies were distributed at random on all foodstuffs, including those which are not represented in the index, the average price of food would be reduced in the ratio 109 : 100 and the food index (with July 1914 = 100) would become $\frac{195}{1.09}=179$.

The way in which subsidies have been applied has introduced a bias into the index ; if this bias were removed, the index of food prices on 1st October of this year would rise from 162 to 179 ; and the index for all items combined would rise from 200 to 210 (July 1914=100 in each case). With this correction the rise in the cost of living since 1938 becomes 35%, instead of 28% as shown by the Ministry of Labour's index ; and the rise in food prices becomes 27½% instead of 15%.[4]

It may further be noted that if subsidies were applied at random, but only to foods included in the official index, which amounted before the war to about two-thirds of the total expenditure on food, the index of food prices on 1st October would become 173, instead of 162 ; the difference between these figures indicates the extent to which subsidies are being applied to foods which are overweighted.

A further adjustment is necessary to allow for the increase in prices of beer and tobacco, which are effectively excluded from the present index. Beer is not included at all and tobacco is given a weight of only about 1% (as at 1938 prices), with the result that a rise of 37% in the price of tobacco, in April of this year, caused an increase in the cost of living index of only one point, or ½%. In fact, the expenditure on beer and tobacco, which has risen rapidly during the past few years, takes up a considerable proportion of total expenditure, so that with the increase in duties, they have an appreciable effect on the general price level.

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[1] Mr. E. Bevin in the House of Commons, 15th October 1942.

[2] Statement by Lord Woolton, 14th July 1942.

[3] BULLETIN Vol. 4, No. 6, p. 134-5.

[4] The increase since 1st September, 1939, would be 30%, which agrees with Miss Schulz's estimate for a minimum diet (see above).

The total national expenditure on beer and tobacco in 1938 may be estimated at about £340 million, divided in approximately equal proportions between the two items.[1] Before the increases in duty which were imposed in April of this year, the annual expenditure was stated to be approximately £330 million on beer and £340 million on tobacco.[2] Consumption of both beer and tobacco declined in subsequent months but has since returned to nearly the former level. Thus the present expenditure on beer and tobacco must be of the order of £850 million per annum.

The total national expenditure on consumption was estimated at £4,040 million in 1938 and £4,550 million in 1941.[3] Allowing for a slight increase in consumption since then, as indicated by the Board of Trade Retail Sales Index, and for the increased outlay on drink and tobacco, present expenditure on consumption must be of the order of £4,800 million per annum. Expenditure on beer and tobacco amounted, therefore, to about 8½% of total expenditure in 1938 and at present the proportion is as high as 18%.

Prices of tobacco have risen by about 100% since 1938 and prices of beer by about 80%. Since they are roughly of equal importance, we can assume an average increase, for beer and tobacco together, of 90%. Combining this with the general index, which, as estimated above, shows an increase of 35% since 1938, and allowing for the fact that tobacco is partially included already, we find that the price index for all items shows an increase of 39%, if tobacco and drink are included with a weight proportionate to expenditure in 1938.[4] Allowing for possible minor corrections, mentioned below, it is probably best to express the index in round numbers, as showing an increase in prices, since 1938, of 40%.[5]

There are a number of miscellaneous items which are not included by the Ministry of Labour, but as their prices are unknown it is not possible to make any further correction. We have only the information obtained from an enquiry in Bristol, where it appeared that the prices of these items increased, on the average, by 25—30% between August 1939 and February 1941. Further increases have occurred since then and it is probable that the average price, at present, is between 30 and 50 per cent. above the level of 1938. Since the goods in question accounted for less than 15% of total expenditure in 1938, their inclusion would be unlikely to affect the index by more than 1% in either direction.

We should, perhaps, also allow for the fact that the index of clothing prices, used by the Ministry of Labour, is almost certainly too high ; and for the fact that some of the data are collected from middle-class districts where it is known that prices have not increased quite as much as in working-class districts. But these two factors involve only small adjustments and, since they work in opposite directions, they can safely be ignored.

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[1] Cf. G. Findlay Shirras and L. Rostas, *The Burden of British Taxation*, pp. 126, 160

[2] Figures given by Sir Kingsley Wood, 15/4/42.

[3] The White Paper on War Finance, Cmd. 6347.

[4] The increase would be 42% if drink and tobacco were included with a weight proportionate to present expenditure, but it is not clear how far the increased expenditure during the war can be attributed to wage earners. It is assumed that the proportion of beer and tobacco in working class consumption is the same as for the whole country, though it may be slightly higher.

[5] For teetotalers and non-smokers, the increase is 35% ; for others, more than 40%.

The result which has here been obtained, namely that prices are about 40% higher than in 1938, compared with the official figure of 28%, reflects seriously on the accuracy and utility of the Ministry of Labour's cost of living index. The index has been prevented from rising by what is apparently a deliberate policy of stabilising the prices of particular items, such as eggs and sugar, which are overweighted ; and allowing indirect taxes to be imposed on goods which fall outside the index. It may be added that the revised index which has here been estimated makes no allowance for the effects of rationing in restricting the consumer's freedom of choice, although this should properly be allowed for in any comparisons of real income.

EARNINGS.

The average earnings received by workers in the principal industries, which have risen more than wage rates on account of longer hours and increased payments for overtime, are shown below, in index number form, beside the changes in wage rates, for the same periods, according to Professor Bowley's index. The first series of earnings, marked (*a*), shows the index numbers which are obtained when the different industries are weighted according to the numbers employed in 1938. The second series, marked (*b*), shows the changes in average earnings at each date when the industries are weighted by the numbers currently employed at these dates. Thus the first series shows the average increase in earnings while the second shows the increase in average earnings, the difference being due to shifts from lower to higher paid occupations, which have apparently been more important, in their effect on average earnings, than the increased employment of women and juveniles. The index of wage rates would be less affected by different systems of weighting.

The earnings series are taken from the Ministry of Labour's earnings enquiries, the figures for January 1942 being adjusted to allow for builders' earnings, which were affected by the bad weather, so as to make them comparable with the figures in the previous years. Earnings in the industries excluded from these enquiries (coal, agriculture, railways) show roughly similar changes and their inclusion, therefore, would probably not affect the general results.

INDEX NUMBERS OF EARNINGS AND WAGE RATES.

	Oct. 1938	*July 1940*	*July 1941*	*Jan. 1941*
(*a*) Average Earnings (1938 weights)	100	127	137½	143
(*b*) Average Earnings (current ,,)	100	130	142	150
Wage Rates (Bowley)	100	114	122½	127
Ratio of Earnings (*b*) to wage rates	1.00	1.14	1.16	1.18

The ratio of earnings (series (*h*)) to wage rates, which is also shown here, enables us to make a rough estimate of the average increase in working hours.[1] Since overtime is probably paid, on the average, about 50% more than normal working hours, we can assume that two-thirds of the increase in the ratio of earnings to wage rates indicates approximately the change in average working hours, including Sunday work as well as overtime. Owing to the extension of piece rates, and bonus payments for night work, the proportion should probably be less than two-thirds. Thus the increase in average working time, between October 1938 and January 1942, appears to have been approximately 10%. The fact that there has been a considerable lengthening of working hours should certainly be taken into account when considering the increase in earnings.

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[1] Series (*a*) might be thought more appropriate but does not allow for the increased importance of war industries.

The index of wage rates in October 1942 being 132 (October 1938=100), if we assume that the ratio of earnings to wage rates has remained practically constant since the beginning of the year, a fairly reasonable assumption, the index of average earnings in October would be 156. In previous calculations it was found that the total income tax liabilities of wage earners amounted to approximately 3% of the wage bill in 1940 and about 7% in 1941, the proportion in 1938 being negligible.[1] The proportion of income tax to wages at present may be tentatively estimated at 10%. Using these results, we obtain the series for net earnings shown below.

INDEX NUMBERS OF EARNINGS AND PRICES

	Oct. 1938	*July 1940*	*July 1941*	*Oct. 1942*
Average gross earnings[2]	100	130	142	(156)
Average net earnings[2]	100	126	132	(140)
Cost of living index (M. of Labour)	100	119	127½	128
Cost of living index (revised)[3]	100	120	133	140

It appears that net earnings, allowing for income tax liabilities, have kept fairly well in step with the general level of retail prices, as shown by the revised index. The increase over the past four years is in each case about 40%. Average hourly earnings, in real terms, must have fallen, therefore, by about the same extent as working hours have been increased. The figures given here relate to the general average for most of the important industries, while there has, of course, been considerable variation about the average.

J. L. NICHOLSON.

SOME PROBLEMS OF NON-FOOD RATIONING

While food rationing, although still far from being comprehensive has been making steady progress, non-food rationing did not expand after the introduction of the point system for clothing and footwear.[4] The most important bottlenecks in non-food consumption seem to be fuel, household goods and long-range travelling. We shall deal below with the problem of rationing of these three items.

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[1] Cf. BULLETIN Vol. 4, No. 8, p. 167. It must be remembered that income tax liabilities differ from the payments made in any period, being usually larger. No allowance is made for post-war credits.

[2] The figure for October 1942, since it is estimated from the index of wage rates, is placed in brackets.

[3] The index for October 1942 was estimated above. The other index numbers, which refer to average prices in 1940 and 1941, were given in a previous article, BULLETIN Vol. 4, No. 8, p. 168.

[4] Except that towels, tea towels and curtains have been included in the clothing scheme. Rationing of soap is managed by the Ministry of Food.

1. It seems fairly likely that the present measures to cope with the scarcity of coal cannot be relied upon to balance demand and supply beyond this winter because they involve drawing on stocks. If output does not increase substantially rationing will finally prove necessary. It has been argued in this BULLETIN that a satisfactory solution of fuel rationing could be obtained by combining it in one scheme with clothes and footwear rationing.[1] Indeed the requirement of a household for fuel is not necessarily proportionate to the number of persons because it depends to a certain extent on the number of rooms. Now households with a relatively large number of rooms per person will be as a rule those of the more well to do. Such households, however, will in general be in possession of larger stocks of clothing and may thus more easily abstain from buying new clothes.

The problem of the point relation between clothing and coal in a combined rationing scheme has been considered in one of the articles quoted.[2]

The number of clothing-fuel coupons which should be given to children would depend on the balance of two considerations : (1) large families require less fuel per person if they heat only one or two rooms ; (2) children require more clothes and footwear, which is accounted for in the present clothing scheme. The difference in climatic conditions of various regions can be taken into account by varying the number of clothing-fuel coupons geographically. It has been indicated that such ' regionalisation ' of the rationing of fuel cannot take account of all differences in climatic conditions. In the clothing-fuel scheme the hardships due to this factor would be lessened to a certain extent by the possibility of buying less clothing and more fuel.

2. The problem of shortages and high prices in the sector of household goods cannot be solved by utility schemes and price control now in operation. The utility schemes apply to new production of household goods which probably will fall short of demand at utility prices. The price control for household goods in stock amounts to freezing prices at the level they were when the control was recently introduced. This price level is very high and in many cases probably not fully justified by the war-time increase in prime costs (inclusive of purchase tax). Moreover an effective price control even on this basis presents serious difficulties.

The missing link in the present system of distribution is clearly rationing. It may, however, be easily seen that in the case of household goods rationing must be supplemented by licensing. Rationing may take account only of demand arising out of wear and tear of durable goods in existing households ; adequate supplies for newly married couples or people bombed out must be made available ' off the ration.' (Such an arrangement exists already in the clothing scheme for bombed out people ; priority for utility furniture is also given to newly married couples and people bombed out.)

The scheme of distribution of household goods should thus be based on a small personal point or value ration corresponding to the wear and tear requirements and on licensing in ' extraordinary ' cases. Such a scheme would be fairly easy to operate on new production which is now fully (or almost fully) on utility lines. Its extension to goods in stock is fairly difficult because they are not standardised and because the coupon control would not be very effective.

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[1] BULLETIN, Vol. 4, Nos. 10 and 11.

[2] BULLETIN, Vol. 4, No. 11, p. 217.

One way would be, of course, to leave the ' old goods ' outside the distribution scheme (this was actually the course taken by the Board of Trade in licensing of furniture which applies only to newly produced utility furniture). Such a solution may, however, be objected to on the following grounds : (1) it is inequitable, everybody with sufficient means being able to buy from ' old stock ' at high prices ; (2) to include ' old ' stock at least partly in the rationing and licensing scheme would permit reduction of current production even more, or the preparation of an emergency reserve of household goods in case the bombing of this country were renewed.

A better solution may be achieved in the following way. A Government agency earmarks in shops and stores household goods suitable for mass consumption, pays a reasonable price to the dealers for them, and fixes on them prices comparable with those of utility goods (which may and probably will be lower than the prices paid to the dealers). These goods are then either made available to the rationing and licensing scheme or (which is probably easier from the point of view of administration) stored for emergency. The proceeds of their sale would, of course, be transferred to the Government agency which would control the shops by making inventories from time to time of the earmarked goods.

3. The bottleneck in long-range travelling has been dealt with so far mainly by reducing the number of passenger trains and suspending certain long-range bus services. As a result average utilisation of all passenger trains has approximately doubled.[1] This was quite a reasonable way of coping with the situation. People were forced to travel less conveniently or to give up travelling altogether. If, however, the demand for travelling facilities increases further or the number of trains (or bus services) is further reduced, the system may cease to work because passengers will frequently be stranded. At such a point some kind of rationing, difficult though it is, becomes imperative. The increase in fares (and the recent abolition or cheap daily return tickets actually amounted to this) is either ineffective in cutting down travelling or curtails it in an inequitable way.

It is indeed obvious that travelling does not lend itself easily to rationing, the demand for this service being extremely uneven. The natural system for a just curtailment of travel is comprehensive licensing, but the amount of administrative work involved is clearly prohibitive. We try to outline below a kind of licensing-rationing scheme, which is far from being easy in operation but at least seems practicable.

The 'licensing part' of the scheme would be as follows : (1) workmen's tickets would be not affected by rationing ; (2) present holders of season tickets would be entitled to renew them ; (3) season tickets would be sold in addition to persons who are not in possession of such tickets at present but who require them by virtue of their occupation (travelling to and from work or on duty) ; (4) people who travel regularly in connection with their work but not frequently enough to make it worth buying a normal season ticket would get cheaper season tickets of special type ; (5) for ' irregular ' travelling on duty emergency tickets would be sold.

[1] E. T. Buckatzch 'Reorganisation of Inland Transport,' BULLETIN, Vol. 7, No. 16.

The rest of travelling (except that of soldiers) would be rationed by distance. The personal ration should be relatively high (say an equivalent of £5 to £10 worth of third class return tickets per annum), because the demand of some for travelling services is high (for instance that of members of dispersed families) while many people travel very little. In particular cases even a relatively high ration may involve serious hardship. To remedy it the scheme would permit the exchange of coupons of other non-food and perhaps also some food schemes for travelling coupons (but not vice versa) at established exchange rates. This would give to the travelling scheme some elasticity, but at the same time more travelling would require a sacrifice in other sectors of consumption. A cut in travelling could be affected both by the reduction of the 'basic ration' and by the increase in the exchange rate between other coupons and the travelling coupons.

Because of the uneven demand for travelling services strong precautions should be taken against transfer of coupons. (For instance, coupons should be cancelled by a date stamp in the booking office and controlled in the train together with the ticket. Otherwise one person might buy a ticket for another.)

The scheme outlined still clearly involves substantial administrative work, but with further straining of the railway and bus services something of this type may become necessary. M. KALECKI.

DIARY

ADVERTISING IN TRADE PAPERS

In order to obtain an approximate picture of the claim of advertising on the supply of paper for periodicals under present regulations, six trade papers were chosen at random and it was found that the average percentage of space occupied by advertisements in the current year's issues of these periodicals averaged from 54% to 67%, the average for all these papers together being 58%. With the exception of a few pages of classified advertisements in some of the journals, publicity consisted entirely of prestige advertisements in so far as the articles displayed were either unobtainable or, at least, in short supply.

The total amount of paper allocated to periodicals for the three months December 1941 to February 1942 was 14,000 tons.[1] Since then, allocations have been cut by 10% and the annual rate of paper consumption in periodicals is, at present, probably about 50,000 tons. Any estimate of the demand of advertisements on this supply is, of necessity, vague; periodicals other than trade papers carry less advertisements, there are also no circulation figures available to ascertain what proportion of total paper supplies to periodicals goes to trade journals. Taking these facts into consideration, paper consumption by prestige advertisements in periodicals may well be of the order of 35% of the total allocation of paper. If 35 per cent. were the true number, prestige advertisements in publications other than newspapers would still be allowed to use an amount of paper no less than the total supply allotted for the production of books, of about 18,000 tons.[2]

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[1] Mr. Macmillan, Hansard, January 8th, 1942, col. 57.

[2] Professor A. L. Bowley, BULLETIN Vol. 3, No. 15, page 339. Allowance has been made for the further cut in December 1941.